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File: PGPB

Mar 17, 2005

DOCUMENT-IDENTIFIER: US 20050060200 A1

TITLE: Remote prescription refill system

Abstract Paragraph:

A prescription refill system having Voice-over-IP (VoIP) capabilities is provided. A central station remote from a pharmacy is provided for receiving phone calls (e.g., PSTN or VoIP calls) relating to prescription information. The central station obtains the prescription information, and automatically dispatches same to a pharmacy for filling. The pharmacy can dial into the central station to receive prescription information, or the information can be periodically faxed, e-mailed, or sent via the Internet to the pharmacy. A computer at the pharmacy allows for information to be retrieved from the central station, including voice messages stored at the central station. Calls made to the pharmacy can be forwarded to the central station automatically. A caller calling the central station can be switched to a live operator at the pharmacy for additional assistance.

Summary of Invention Paragraph:

[0008] Rhodes, et al., U.S. Pat. No. 5,666,492 discloses a computer based pharmaceutical care cognitive services management system and method that facilitates the transformation of a vendor to a health care provider. The invention captures the value added by a pharmacist to a patient encounter and enables the pharmacist to financially recover for the services provided. The system allows for the processing of interruptions during sessions.

Summary of Invention Paragraph:

[0021] It is still a further object of the present invention to provide a prescription refill system where the refill information is transmitted to the pharmacy over the Internet.

Summary of Invention Paragraph:

[0027] A central station is provided to which the pharmacy can forward calls at the convenience of the pharmacy. A caller will call in to the pharmacy to request a refill and the call will be automatically routed to the central facility unbeknownst to the caller. The central station will obtain the refill information required, preferably by means of an automated computer system. This information can then be transferred to the pharmacist in a number of ways, such as by periodically faxing the information to the pharmacy. Voice messages could be flagged and the pharmacist would call into the central facility to obtain the voice mail message. Alternatively, a PC could be installed in the pharmacy having a reduced version of a complete, stand-alone program. The refill information can then be sent to the pharmacy by modem and the pharmacist could see a computer display of the refill orders and could hear voice messages. Alternatively, the information could be e-mailed to the pharmacy. Finally, a pager system may be utilized to alert the pharmacist to retrieve orders by telephone with a password. It should also be noted that orders could be taken by the central station over the Internet rather than merely through customer calls. The central station receiving prescription refill requests can electronically communicate directly with a pharmacy management system to confirm prescription refill availability.

Brief Description of Drawings Paragraph:

[0043] FIG. 15 is a diagram of another embodiment of the present invention, wherein Voice-over-Internet Protocol (VoIP) capability is provided.

Detail Description Paragraph:

[0059] The program allows customers to leave the refill voice message attached to their refill order (for example: "I don't have a refill number handy but I need another refill of XYZ you have on file to be delivered with my order." or "Please contact my doctor at 212-222-2222 for refill authorization, of XYZ." or "Add to my delivery order 100 ABC pills and three tubes of Crest.RTM. regular toothpaste.") If this option is chosen the system will prompt the callers during their refill request session to leave a voice message with instructions to the pharmacist. Check the Ask for Refill Message check box to activate this feature.

Detail Description Paragraph:

[0062] The Order Status Verification feature allows callers to verify the status of the prescription refill previously ordered through the program. If the option is activated, the customers will have the choice on the Main Voice Menu of checking the status of their refill order. Check the Order Status Verification check box to activate this feature.

Detail Description Paragraph:

[0068] The Doctor's Orders section allows adjusting the Doctor's Menu to the preferences of doctors in the community. One may choose any combination of the following options by checking the appropriate check boxes in the Doctor's Orders section. The Refill option allows doctors to record new prescriptions and/or refill authorizations in just one recording. They are prompted by the system to state their full name and phone number, patient full name and phone number and all relevant information for the new prescription and/or refill authorization.

Detail Description Paragraph:

[0115] If one activated the Doctor's Orders option in the Setup, the system will provide a Main voice menu item "Doctors Only Press . . . " where doctors or their assistants will be prompted to record refill authorizations or a general voice message. Doctor's orders are displayed on the Doctor Orders or All screens with type "Doctor" and blank "Rx Number field. When at least one voice file has been recorded there will be "Yes" in the Voice column. To work with the Doctor's order, select Doctor's order by clicking on the row in the Information Window. One may listen to all the information recorded by the doctor by clicking on the Play Voice Files button on the Toolbar or by selecting Play Voice Files option from the Actions menu. To control the play back of the voice file and/or transcribe the information that was recorded, click on the Data Entry button on the Toolbar. The Doctor screen will be displayed. On the Doctor screen one may; play voice file by clicking on the Play, Stop, Start, Back, Forward or End buttons; type the information that was recorded in the Memo window; print the Doctor Order by clicking on the Print button; choose the printer to print the typed in information by clicking on the Print Setup button (available only if a full-page printer is connected to the system). As Doctors may record prescription information for unlimited number of patients in one recording, one may play and type in the patient's name, address and telephone number and prescription information for each patient individually.

Detail Description Paragraph:

[0136] Orders can be sent by the central station to the pharmacy in one or more of a number of ways such as via telefax, or via modem to a pharmacy PC programmed to receive the orders over the Internet or via e-mail, or on a pharmacy pager, or in some combination. If a PC is used by the pharmacy, a portion of the stand-alone software is utilized to permit the pharmacist to view the orders and to hear voice messages.

Detail Description Paragraph:

[0148] 1. To a fax machine. 2. To a personal computer at the pharmacy by modem. The pharmacy, utilizing a portion of the software from the stand-alone version can handle and utilize the information in much the same way as the stand-alone system, despite the fact that the refill orders re being placed at a remote location. Thus, all orders appear on a monitor (through modem dial-up connection or over the Internet). 3. To a pharmacy numeric and alpha-numeric pager (which can also be used as a alternative way of communication in emergency cases and when pharmacy FAX or modem does not respond). 4. To a pharmacy e-mail address (if any). Alternatively, the refill order information can remain at the central station and be retrieved by the pharmacy by calling in to the central station.

Detail Description Paragraph:

[0151] The following programs are running on the TFS: T1VoiceFaxManager--server program that monitors and supervises up to 72 telephone lines (T1 time slots) for accepting the incoming and outgoing telephone and fax calls. T1VoiceFax--client program that handles one specific telephone line (T1 time slot) and actually processes incoming and outgoing voice and fax calls. Up to 72 T1VoiceFax programs can run on each TFS. Modem Server (MS)--computer that transmits transactions (including digitized voice files) taken by TFS to workstation in the pharmacy. Transactions can then be accessed through client GUI screens. Multiple MSs are connected to DS via the LAN. MS is the Windows NT client with multiple analog or digital modems installed. MSs can only communicate and exchange data with DS. The following programs are running on the TFS: T1ModemManager--server program that monitors and supervises all modem connections. T1Modem--client programs that actually transmit data through individual communication port. Internet Server (IS)--computer that hosts RT Web site. Pharmacy customers can log on to the Web site from anywhere in the world and order their prescription refills. Orders, entered through the Internet are inserted into the Refill database on DS and the pharmacy can be notified either via fax (VFS) or modem (MS).

Detail Description Paragraph:

[0153] The present invention requests customers' phone numbers in case they need to be reached. The "Seven Digits" customer phone number in the sign up sheet is chosen if the pharmacy services a local region with only one area code and one does not want to request an area code with the customer's phone number. The "Ten Digits" customer phone number in the sign up sheet is chosen if the pharmacy serves customers from more than one area code region

Detail Description Paragraph:

✓ [0191] FIG. 11 is a schematic diagram of another embodiment of the present invention wherein the central station can communicate with a pharmacy management system to electronically confirm prescription refill availability. As can be seen, a customer can use a customer telephone 20 to connect to the central station 30 over a public telephone service network (PTSN) 26 through connection paths 22 and 24. The customer can call in refill orders, and the central station 30 can send refill reminders. Doctors can send refill authorizations over the PTSN 30, typically by facsimile from office fax machines 28 over connection path 29 to the central station 30. The central station 30, responsive to a refill request from a customer, can communicate with a pharmacy management system 40 over electronic data interface 42, which would typically be in XML, to verify that such refill request is authorized. If so, the central station 30 could continue to process the refill request. Additionally, the central station 30 could advise the customer as to any relevant information received from the pharmacy management system 40. If not, the central station 30 could contact the doctor via facsimile to request refill authorization.

Detail Description Paragraph:

[0192] If the refill request is authorized by the pharmacy management system 40, the central station 30 completes order with the customer over the telephone and sends the completed order (including an optional voice message) to the pharmacy

management system 40, over the connection 42 or over the Internet, which in turn delivers the refill order information to the pharmacies 60 over the Internet 50 via connections 52 and 54. Pharmacies 60 can also perform central station control and configuration tasks such as exhibited in FIG. 14 over the Internet via connections 54. In another embodiment, the pharmacy management service is not central but located at the pharmacy, and the central station 30 communicates order information thereto over the Internet via connections 52 and 54.

Detail Description Paragraph:

[0193] Referring now to FIG. 12, a flow chart of the operation of this embodiment of the invention is provided. A call coming over a public telephone service network 100 is directed to a pharmacy. If desired, the pharmacy can have a customer call forwarded to the central station at 105. The call is accepted at the central station at 110 and answered with an initial greeting indicating location, an after hours message, or an overflow message. At 115, the central station provides a main menu. If the customer indicates that the call is for a customer refill at 120, the prescription number is captured via DTMF input or voice recognition at 140 and is formatted to XML language and a request is sent to the pharmacy management host at 155 using HTTP protocol over the Internet or TCP/IP protocol over the Intranet. If the customer is not calling for a refill at 120, the call may be a doctor's message at 125. If so, the doctor's message is recorded at 145, and the voice message file is posted to the central station FTP server at 160. As soon as host system receives the order with the voice file name, the voice file is automatically downloaded via FTP. At 170 the doctor's message order is sent, including the voice file, to the pharmacy management system. If the response to the main menu 115 is a customer message at 130, the customer's message is recorded at 150 and at 165 the voice message file is posted to the central station FTP server. As soon as the host system receives the order with the voice file name, the voice file is automatically downloaded via FTP. At 175 the customer's message is sent including a voice file name to the pharmacy management system. If the answers to the menu 115 are none, the call is ended at 135.

✓ Detail Description Paragraph:

[0194] Referring back to block 155, after the formatted refill request is sent to the pharmacy management host system over the Internet, another process is invoked at 180. Referring to FIG. 13, if the pharmacy management system checks to determine if the prescription number is valid for refilling at 200. If yes, the prescription number is verified at 210 and the caller's telephone number is captured via DTMF input or voice recognition at 225. A voice message accompanying the refill order is recorded, if any, at 235 and posted to the central server FTP site at 245. At 255 a response is sent to the caller with the date and time when the order will be ready for pickup/delivery based on store schedule, or confirm the order acceptance. At 260 the complete order information is sent to the host pharmacy management system including the voice file name. The voice file is automatically downloaded from the central station FTP site. Then the call is ended at 220. If the prescription number is not valid for refilling at 200, the customer is informed about problems with the refill and is offered doctor contact options at 205. The option for the pharmacy to contact the doctor is provided at 215. If yes, the central station determines whether sending a fax to the doctor is an option at 230. If yes, a fax is generated to the doctor at 240 and at 250 "call doc" information is sent to the pharmacy management system and the call is ended. If the pharmacy is not able to contact the doctor at 215, the call is ended at 220. If faxing to the doctor is not an option than a "call doc" message is sent to the pharmacy management system at 250 and the call is ended at 220.

Detail Description Paragraph:

[0195] It should be noted that any desired information can be used to identify a prescription during a call. Examples of such information include, but are not limited to, patient name, doctor name, and drug name. Such information can be provided using DTMF input during the call, or using speech recognition and text-to-

speech technologies.

Detail Description Paragraph:

[0197] FIG. 15 is a diagram showing another embodiment of the present invention, wherein Voice-over-Internet Protocol (VoIP) capabilities are provided. Importantly, prescription orders can be placed with the central server using not only a conventional PTSN connection, but also a VoIP connection using suitable equipment. A customer can use a customer telephone 420 to connect to the central station 430 over PTSN 426 through connection paths 422 and 424. Further, a customer can use a VoIP telephone 432 to connect to the central station 430 over the Internet 450 using connection paths 434 and 438. The customer can call in refill orders via standard telephone over PTSN 426 or via VoIP over Internet 450, and the central station 430 can send refill reminders. Further, doctors can send refill authorizations over the PTSN 426 or the Internet 450 using telephone 420, VoIP phone 432, or facsimile via fax machine 428 and connection path 429. A pharmacist could also call the central station 430, using any desired connection methodology such as PTSN 426 or VoIP via Internet 450. The central station 430 includes voice recognition software and text-to-speech software for allowing the central station 430 to receive, process, and exchange spoken information with the caller.

Detail Description Paragraph:

[0198] Similar to the embodiment of the present invention shown in FIG. 11, the central station 430, responsive to a refill request from a customer, can communicate with a pharmacy management system 440 over electronic data interface 442, which would typically be in XML, to verify that such refill request is authorized. If so, the central station 430 could continue to process the refill request. Additionally, the central station 430 could advise the customer as to any relevant information received from the pharmacy management system 440. If not, the central station 430 could contact the doctor to request refill authorization.

Detail Description Paragraph:

[0199] If the refill request is authorized by the pharmacy management system 440, the central station 430 completes the order with the customer over the telephone and sends the completed order (including an optional voice message) to the pharmacy management system 440, over the connection 442 or over the Internet 450 via connections 452 and 451. The central station also delivers the refill order information to the pharmacies 460 directly or through the pharmacy management system 440 over the Internet 450 via connections 452 and 454. Pharmacies 460 can also perform central station control and configuration tasks such as exhibited in FIG. 14 over the Internet 450. In another embodiment, the pharmacy management service 440 is not central but located at the pharmacy, and the central station 430 communicates order information thereto over the Internet via connections 452 and 454.

Detail Description Paragraph:

[0200] Telephone calls made to the pharmacy 460 can be transferred to the central server 430 by way of PTSN or VoIP. For example, a doctor can call into the central server 430 using VoIP-capable phone 432, which could be located at the doctor's office and connected to the Internet 450. Further, a pharmacist or other pharmacy personnel can call into the central server using a similar VoIP-capable phone located at the pharmacy. Moreover, a patient can call the central server using a VoIP connection. Any desired medical and pharmacy personnel, or any patient, can interact with the central server using VoIP technology.

Detail Description Paragraph:

[0201] Additionally, the central server 430 of the present invention could be provided with the ability to allow a caller to switch, during a call to the server, to a live operator 468, using any desired connection to the live operator, including, but not limited to, PSTN 426 via connection paths 464 and 466, or a VoIP connection over the Internet 450 using VoIP paths 438 and 436. The live operator

could be located at the pharmacy, or at any other desired location. This allows the caller to be provided with immediate additional information regarding a prescription. The caller could be provided with a key sequence to enter via a DTMF keypad to allow the call to be transferred to the live operator, or VoIP telephone number corresponding to the live operator could be provided during the call for subsequent use by the caller.

## CLAIMS:

13. The system of claim 1, wherein the prescription information comprises patient name, doctor name, and drug name.

23. The method of claim 14, wherein the step of gathering refill information comprises gathering a patient name, a doctor name, and a drug name.

29. The system of claim 24, further comprising means at the central station for communicating with a pharmacy management system remote from the central station for verifying the prescription refill information;

32. The system of claim 24, wherein the prescription information comprises patient name, doctor name, and drug name.

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